CONTRIBUTIONS FROM THE UNIVERSITY
OF MICHIGAN HERBARIUM, NO. 4

STUDIES OF TROPICAL AMERICAN PLANTS—I

BY

CYRUS LONGWORTH LUNDELL

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THE accumulated collections of vascular plants from the Maya area, particularly from southern British Honduras and the mountains of Chiapas, are yielding numerous new or otherwise exceptionally interesting species. A majority of the novelties now proposed were obtained by the 1936 Michigan–Carnegie expedition to British Honduras, and by Mr. Eizi Matuda in Mexico during 1938 and 1939 on two visits to Volcán de Tacana and in 1939 on a trip into the lower valley of the Usumacinta River. Mr. Percy H. Gentle, who has botanized continuously in British Honduras since 1931 under the auspices of the University of Michigan, is now extending his collecting into the interior of Stann Creek District. Although most of the area in which he is working has been explored, chiefly by Mr. W. A. Schipp, new species and additions to the flora are appearing in every lot of specimens received.

The writer is deeply indebted to Mr. C. V. Morton and Dr. P. C. Standley for contributing descriptions and discussions of new Solanaceae and Rubiaceae. To the Horace H. Rackham School of Graduate Studies of the University of Michigan acknowledgment is made for the grant which made this publication possible.

Litsea acuminatissima Lundell, sp. nov.—Arbuscula, ramulis glabris, subatris. Folia persistentia, petiolo usque ad 1.4 cm. longo, gracili, canaliculato, lamina chartacea, lanceolata, 3.5–7 cm. longa, 1.5–2.5 cm. lata, apice caudato-acuminata, basi acutiuscula, glabra, concolora, penninervi, venis lateralibus 5–8-jugis, utrinque minute scrobiculata. Inflorescentiae partiales 4–5-florae racemis in foliorum axillis solitariae vel binae dispositae, rachibus glabris, pedunculo glabro usque ad 4 mm. longo. Involucri squamae deciduae, primum minute sericeae, ciliatae. Flores ♂: Pedicelli quam perianthium breviores, 1 mm. (raro usque ad 2 mm.) longi, accrescens, sericeo-tomentosi. Perianthii tubus brevis, parce sericeo-tomentosi. Segmenta 6, oblonga vel elliptica, usque ad 3

mm. longa, glabra. Stamina 9, filamentis quam antheris paululo longioribus vel eis aequalibus, tribus interioribus biglanduliferis. Ovarium abortivum. Flores ♀ desunt. Bacca parva, globosa, ca. 6 mm. diam., cupula minima (diam. 1.6–2 mm.). Pedicelli fructiferi usque ad 4 mm. longi.

Mexico, Vera Cruz, Maltrata, May 6, 1937, *Eizi Matuda 1211* (type in the University of Michigan Herbarium).

L. acuminatissima has affinity with *L. glaucescens* H.B.K., but differs from that species in having leaves nonglaucous, partial inflorescences borne in racemes, peduncles not over 4 mm. long compared with those of 18 mm. in *L. glaucescens*, sericeous-tomentose pedicels shorter than the perianth, a distinct perianth tube, and fruits scarcely 6 mm. in diameter.

Litsea Matudai Lundell, sp. nov.—Arbor parva, 3–4 m. alta, 15–20 cm. diam., ramulis glabris, subatris. Folia persistentia, petiolata, petiolo usque ad 17 mm. longo, glabro, gracili, canaliculato, lamina subcoriacea, lanceolata vel oblongo-lanceolata, 2.5–7.2 cm. longa, 1.2–2.7 cm. lata, apice acuminata, basi acuta, supra parce sericea, subtus glabra, pallida, penninervi, venis lateralibus 5–7-jugis, costa supra subimpressa, obscure scrobiculata. Inflorescentiae 6–7-florae in foliorum axillis solitariae, pedunculo glabro, 5–8 mm. longo. Involucri squamae deciduae. Flores ♀ : Pedicelli 2–3 mm. longi, dense adpresse albido-pilosi, floribus breviores. Perianthii tubus nullus. Segmenta 6, oblonga vel lanceolato-oblonga, 3.2–5 mm. longa, 1.8–2.2 mm. lata, obtusiuscula, trinervia, extus glabra, intus sericea. Staminodia 9, spatuliformia, tria interiora biglandulifera, glandulis reniformibus ad hilum stipitatis. Ovarium glabrum. Stylus curvatus. Stigma disciforme irregulariter bilobum. Bacca globosa, diam. 1 cm., cupula minima (diam. ca. 3.5 mm.).

Mexico, Chiapas, west side of Volcán de Tacana, altitude 2800 m., March 30, 1939, *Eizi Matuda 2933* (type in the University of Michigan Herbarium).

L. Matudai is closely related to *L. guatemalensis* Mez and *L. flavescens* Bartlett. From *L. guatemalensis* it may be separated immediately by the glabrous under surface of the leaves and soli-

tary inflorescences. According to description, *L. flavescens* has glabrous leaves, pedicels longer than the perianth, and perianth segments in pistillate flowers 2.4 mm. long, in contrast with leaves sericeous above, pedicels shorter than perianth, and perianth segments in pistillate flowers 3.2 to 5 mm. long in *L. Matudai*.

Litsea pallens Lundell, sp. nov.—Arbuscula, ramulis numerosis, subatris vel brunneis, obscure striatis, glabris. Folia persistentia, glabra, petiolo usque ad 1 cm. longo, gracili, canaliculato, lamina subcoriacea, non glaucescenti, pallida, concolora, lanceolata vel anguste oblongo-lanceolata, 3.5–7.5 cm. longa, 1–2.4 cm. lata, apice acuminata, basi acuta, penninervi, raro obscure subtriplinervi, venis lateralibus 6–9-jugis, utrinque minutissime scrobiculata; inflorescentiae 3–6-florae in foliorum axillis corymbosae, paniculatae, vel solitariae, pedunculo glabro, raro parce puberulo, 5–13 mm. longo. Involucri squamae deciduae, interiores utrinque adpresse puberulae vel minute sericeae, exteriores extus glabratae. Flores ♂: Pedicelli juventate dense sericeo-tomentosi, aetate subglabri, 0.5–3 mm. longi. Perianthii tubus ca. 1 mm. longus; segmenta 6, oblonga, elliptica, vel obovata, 3–4 mm. longa, 3–5-nervia, extus glabra, intus parce sericea. Stamina 9, filamentis antheris subaequalibus, tribus interioribus biglanduliferis, glandulis lobatis; antheris oblongis, apice emarginatis. Ovarium abortivum. Fructus ignotus.

Mexico, Tamaulipas, sierra near Victoria, altitude 1200 m., February, 1932, *H. W. von Rozynski 341* (type in the University of Michigan Herbarium).

L. pallens is another segregate from the complex of *L. glaucescens* H.B.K. The pale concolorous, nonglaucous, comparatively short petioled leaves, shorter peduncles, tomentose pedicels, well-developed perianth tube, and perianth segments sericeous within are distinguishing characteristics.

Bocconia oblanceolata Lundell, sp. nov.—Ramuli apice dense foliati, 0.8–1.3 cm. crassi, glabri. Folia haud glauca, chartacea, sessilia, oblanceolata, 15–30 cm. longa, 5–8 cm. lata, apice acuminata, basi angustata, subcuneata, obtuse glanduloso-serrulata,

utrinque glabra, nervis lateralibus numerosis, gracilibus. Panicula glabra, multiflora, pedunculata, usque ad 55 cm. longa, bracteis ovato-lanceolatis, obtusiusculis vel acutis, minute ciliolatis, quam pedicellis brevioribus, pedicellis 5–18 mm. longis. Sepala elliptica, abrupte acuminata, 1.1–1.2 cm. longa. Filamenta filiformia, 2–3 mm. longa. Antherae 6–8 mm. longae. Ovarium 5 mm. stipitatum, ca. 3 mm. longum, haud glaucum. Stylus crassus, 2 mm. longus. Stigmata 4–5 mm. longa, villosa. Fructus immaturus glaucus.

Mexico, Chiapas, west side of Volcán de Tacana, altitude 2800 m., March 30, 1939, *Eizi Matuda 2916* (type in the University of Michigan Herbarium); Mt. Ovando, April, 1934, *Matuda 2194*.

The species is very closely related to *B. vulcanica* Donn. Sm. of Guatemala, known to the writer only from description. *B. oblanceolata* apparently differs in its much larger nonglaucous oblanceolate leaves, anthers 6 to 8 mm. long compared with those of 5 to 6 mm. in *B. vulcanica*, stipe of ovary 5 mm. long rather than 2 mm., and villous stigmas 4 to 5 mm. long. The stipe elongates after anthesis and becomes longer than the fruits; in *B. vulcanica* the capsule is described as twice exceeding the stipe.

Philadelphus Matudai Lundell, sp. nov.—Frutex. Ramuli pubescentes, graciles. Folia petiolata, petiolo usque ad 1 cm. longo, lamina chartacea, ovata vel raro lanceolata, 3.5–5.7 cm. longa, 1.5–3.5 cm. lata, apice acuminata, basi rotundata, remote denticulata, utrinque strigosa, trivenosa, venis supra impressis. Inflorescentiae subpaniculatae, 5–12-florae, pedicellis, hypanthio et calyce albido-tomentosis. Sepala ovata, 9–11 mm. longa, caudato-acuminata. Petala late obovata, ca. 1.7 cm. longa, extus ad basin parce sericea. Ovarium ad apicem stilum que ad basin pubescentia; stigmata magna, antheris latiora.

Mexico, Chiapas, Volcán de Tacana, altitude 1400 m., March 17–23, 1939, *Eizi Matuda 2791* (type in the University of Michigan Herbarium).

From *P. Karwinskyanus* Koehne, to which it is related, *P. Matudai* may be distinguished by its longer petioles, sepals 9 to 11 mm. long compared with those of 7 to 8 mm. in the former species, and petals nearly twice as large.

Photinia Matudai Lundell, sp. nov.—Arbor, ramulis crassiusculis, novellis tomento dense fulvo-brunneo obtectis. Stipulae ligulatae, usque ad 1 cm. longae. Folia rigide coriacea, petiolata, petiolo 8–13 mm. longo, lamina ovata, lanceolata, vel oblongo-elliptica, 5.7–9.5 cm. longa, 2.2–4.3 cm. lata, apice acuta, basi rotundata et abrupte acutiuscula vel angustata, integerrima, rubro-brunnea, primum utrinque tomentosa, demum glabrata, venis lateralibus utroque latere 8–13, subtus prominentibus, venis et venulis supra impressis. Paniculae terminales, corymbiformes, foliis breviores, ubique dense ferrugineo-tomentosae, pedunculatae, multiflorae, bracteis subulatis, 4–5 mm. longis. Flores subsessiles vel breviter pedicellati, calycis tubo (hypanthio incluso) late obconico, 4 mm. longo, lobis late triangulari-ovatis, erectis, 1.5–2 mm. longis; petalis glabris, suborbicularibus, ca. 4 mm. longis. Stamina inaequalia. Fructus obovoideus, 1–1.2 cm. longus, parce tomentosus.

Mexico, Chiapas, west side of Volcán de Tacana, altitude 2800 m., March 30, 1939, *Eizi Matuda 2937* (type in the University of Michigan Herbarium); Mt. Paxtal ("Pasitar"), December 29, 1936, *Matuda 402*; Siltepec, January 2, 1937, *Matuda 410*.

Although similar to *P. microcarpa* Standl., evidently its closest relative, *P. Matudai* may be easily separated by its thicker broader entire leaves usually ovate or lanceolate rather than oblanceolate. In *P. Matudai* the young leaves are densely tomentose, fulvous-brown above, whitish beneath.

Acacia centralis (Britt. & Rose) Lundell, comb. nov. *Senegalia centralis* Britt. & Rose, *N. Amer. Fl.*, 23: 113. 1928.

The study of *Acacia usumacintensis* Lundell involved a consideration of certain related species described under *Senegalia;* these are now transferred to *Acacia*.

Acacia Cockerellae (Britt. & Rose) Lundell, comb. nov. *Senegalia Cockerellae* Britt. & Rose, *N. Amer. Fl.*, 23: 111. 1928.

Acacia Russelliana (Britt. & Rose) Lundell, comb. nov. *Senegalia Russelliana* Britt. & Rose, *N. Amer. Fl.*, 23: 112. 1928.

Acacia Salazari (Britt. & Rose) Lundell, comb. nov. *Senegalia Salazari* Britt. & Rose, *N. Amer. Fl.*, 23: 113. 1928.

Acacia usumacintensis Lundell, sp. nov.—Arbor 14–15 m. alta, 40 cm. diam., ramulis minute adpresse puberulis, inermibus. Stipulae subulatae, usque ad 2.5 mm. longae, persistentes. Folia petiolata, petiolo et rache junctim usque ad 15 cm. longis, sparse subadpresse puberulis; pinnis 8–10-jugis, foliolis 24–38-jugis, lineari-oblongis, usque ad 6.3 mm. longis, 2 mm. latis, sessilibus, basi truncatis, apice oblique acutiusculis, adpresse ciliolatis, subtus pallidioribus. Infructescentiae longe spicatae, in foliorum axillis solitariae vel fasciculatae, rachi et pedunculo minute adpresse puberulis, junctim usque ad 12.5 cm. longis; leguminibus usque ad 14.5 cm. longis, 3 cm. latis, membranaceis, glabris, apice basique acutiusculis, stipitatis.

Mexico, Tabasco, Boca Cerro on the Río Usumacinta above Tenosique, July 1–5, 1939, *Eizi Matuda 3550* (type in the University of Michigan Herbarium).

The leaves bear a large flat gland near the base of the petiole, usually another between the terminal pair of pinnae, and rarely one between each of the two uppermost pairs of pinnae. From persisting flower fragments, the calyx seems to be 1.3 to 1.5 mm. long, dentate, and appressed puberulent; the corolla is about 2 mm. long, with lobes deltoid-ovate, and acute; and, the numerous stamens have free filaments. The affinities of *A. usumacintensis* are with *A. acatlensis* Benth., *A. centralis* (B. & R.) Lundell, *A. Russelliana* (B. & R.) Lundell, and *A. Salazari* (B. & R.) Lundell.

Dalbergia paucifoliolata Lundell, sp. nov.—Arbor parva, ramulis gracilibus, juventate sparse adpresse puberulis. Folia parva, paucifoliolata, petiolata, petiolo 0.9–2.1 cm. longo, sparse adpresse puberulo, rachi usque ad 2.3 cm. longa, gracili, subtereti, mox glabrata; foliolis 3 vel 5, raro 4, chartaceis, ovato-oblongis, ellipticis, vel raro obovatis, 2–4.5 cm. longis, 1.1–2.4 cm. latis, apice late obtusis vel rotundatis, basi rotundatis, supra glabris, subtus juventate sparse adpresse puberulis, mox glabratis, nervu-

lis prominulis, petiolulis 1.5–1.8 mm. longis. Paniculae axillares, usque ad 3 cm. longae, sparse adpresse puberulae, pauciflorae, breviter pedunculatae, pedicellis 2–3.5 mm. longis; floribus albis, ca. 1 cm. longis; calyce ca. 4.5 mm. longo (lobo et hypanthio incluso), sparse adpresse puberulo; petalis glabris. Stamina 10. Ovarium 3–4-ovulatum. Legumen ut videtur 1-spermum.

Mexico, Tabasco, Reforma on the Río San Pedro de Mártir above Balancan, on river bank, May 22–26, 1939, *Eizi Matuda 3167* (type in the University of Michigan Herbarium).

In *D. paucifoliolata* the standard petal is obovate, attenuate to a truncate base, emarginate at apex, with a claw about 2 mm. long and a blade about 7.5 mm. long, 5 mm. wide. The wings are about 8 mm. long including the claw, and the carinal petals about 5.5 mm. long, including claw. Along the vexillar margin the pistil is puberulent, but otherwise glabrous. The species belongs to the complex of *D. glabra* (Mill.) Standl., and is nearest *D. tabascana* Pittier. It may be readily distinguished from all relatives by its few comparatively large leaflets. The blade of the standard petal in *D. tabascana* is described as 5.5 mm. long, whereas it is 7.5 mm. long in *D. paucifoliolata;* this and leaf differences separate it from *D. tabascana.*

Erythroxylon Bequaertii Standl., *Journ. Arnold Arb.*, 11: 47. 1930. *Erythroxylon belizense* Lundell, *Phytologia*, 1: 215. 1937, **syn. nov.**

Mexico, Yucatán, Chichen Itzá, a bush 3 to 5 m. high, flowers white, June 28, 1939, *J. Bequaert 102* (type in Field Museum Herbarium); near Kaua, in advanced deciduous forest, a tree 5 to 8 cm. in diameter, 5 to 8 m. high, corolla pale green, June 13, 1938, *C. L. Lundell and Amelia A. Lundell 7533.* Quintana Roo, Coba, in relict deciduous forest east of ruins, a tree up to 15 cm. in diameter, 8 m. high, July 4, 1938, *Lundell and Lundell 7807.* British Honduras, El Cayo District, Mountain Pine Ridge, San Agustin, in open fire-swept relict forest on top of limestone hill, a shrub 2 m. high, fruits dark red, August 6, 1936, *C. L. Lundell 6810* (type of *E. belizense* in the University of Michigan Herbarium).

Examination of the type of *E. Bequaertii* shows clearly that the Yucatán and British Honduran plants are conspecific. Although the species appears to be comparatively rare, it has a wide range within the peninsula as evidenced by the cited collections.

Acalypha gummifera Lundell, sp. nov.—Frutex monoecius ca. 2 m. altus, 2.5 cm. diam., glaber, gummifer, ramulis gracilibus. Folia petiolata, petiolo 0.7–3.2 cm. longo, lamina gummifera, anguste lanceolata vel oblanceolato-oblonga, 5–13.5 cm. longa, 1.6–3.3 cm. lata, apice caudato-acuminata, basi anguste rotundata, remote et obscure serrulata, supra glabra, lucida, subtus, axillis pilosis exceptis, glabra, basi trinervi, venis lateralibus 5–6-jugis. Inflorescentiae axillares. Spicae ♂ 3–6.5 cm. longae, densiflorae, graciles. Paniculae ♀ usque ad 6 cm. longae, pauciramosae, filiformes. Flores et pedicelli ♀ non visi; styli persistentes in fructu 3.5 mm. longi, supra basin ca. 10-laciniolati; capsula ca. 2.7 mm. longa, tricocca, glabra; seminibus rubro-brunneis, ovoideis ca. 1.8 mm. diam., 2.1 mm. longis.

British Honduras, Toledo District, Camp 34, British Honduras–Guatemala boundary survey, on hilltop in partial shade, altitude about 900 m., June 23, 1934, *W. A. Schipp 1290* (type in the University of Michigan Herbarium).

According to the collector the leaves are "very gummy to the touch"; this is evident even in the dried specimen. *A. gummifera* is apparently referable to the subgenus Linostachys, section Axillares, but does not appear to be closely related to any described species.

Acalypha Matudai Lundell, sp. nov.—Caules herbacei, pauce glandulosi mox glabri. Folia petiolata, petiolo 3–10.5 cm. longo, canaliculato, supra ad apicem strigilloso, lamina ovata vel rhombeo-ovata, 5.5–10 cm. longa, 3.3–8 cm. lata, apice abrupte cuspidato-acuminata, basi late rotundata, serrato-dentata, basi integra, tenuiter membranacea, strigilloso-ciliata, supra pauce setosa, 3–5-nervi, nervis strigillosis, stipulis minutis. Spicae ♂ axillares, ad 5.5 cm. longae, pedunculatae, densiflorae, graciles, ♀ terminales vel axillares, fructigerae ad 22.5 cm. longae, 2 cm. latae, bracteis

unifloris, fructigeris 7–9-fidis, laciniis filiformibus, usque ad 1.3 cm. longis, pilis elongatis glandulosis. Sepala ♀ 3, ovato-lanceolata, acuta, ciliolata. Ovarium glabrum. Capsula glabra, ca. 3.5 mm. diam.

Mexico, Chiapas, Las Garzas, June 4–7, 1938, *Eizi Matuda 2717* (type in the University of Michigan Herbarium).

A. Matudai is referable to the subgenus Euacalypha, and apparently belongs to the series Pantogynae-Acrogynae, section Dentatae. It probably is nearest *A. glandulifera* Robins. & Greenm., which, however, is not accounted for in Pax and Hoffmann's treatment in the *Pflanzenreich*.

Acalypha tacanensis Lundell, sp. nov.—Frutex, ramulis crassiusculis, sulcatis, juvenilibus dense pilosellis, mox glabrescentibus et parce pilosellis. Folia petiolata, petiolo 4.5–16.5 cm. longo, gracili, apice stipellato, lamina ovata, 16–25 cm. longa, 10–14 cm. lata, apice caudato-acuminata, basi late rotundata, serrata, tenuiter membranacea, supra costis densius ceterum dissite adpresse hispidula, subtus parce pilosella, palmatinervia, nervis 3 vel 5; stipulae usque ad 2 cm. longae, lanceolatae, subulato-acuminatae. Flores ut videtur dioecii. Spicae axillares, ♂ usque ad 6.5 cm. longae, breviter pedunculatae, densiflorae, ca. 3 mm. crassae, ♀ longiores 16.5 cm. longae, pedunculo 2.5–3.5 cm. longo incluso, ca. 1.2 cm. crassae, sublaxiflorae, graciles, pilosellae. Bracteae uniflorae, fructigerae usque ad 11 mm. latae, 6.5 mm. longae, parce stipitato-glandulosae, apice emarginatae, 11–17-dentatae, dentibus brevibus, acuminatis, maximis 1.7 mm. longis, ciliatis. Sepala ♀ ovato-lanceolata, acuminata, ciliata. Ovarium adpresse hirsutum. Styli ca. 5 mm. longi, laciniolati. Capsula ca. 2.5 mm. diam., parce adpresse hirsuta.

Mexico, Chiapas, Volcán de Tacana, altitude 1400 m., March 17–23, 1939, *Eizi Matuda 2786* (type in the University of Michigan Herbarium).

A. tacanensis, referable to the subgenus Euacalypha, series Pantogynae-Pleurogynae, section Palminerviae, has close affinity with *A. tenuicauda* Pax & K. Hoffm. of adjacent Guatemala. According to description, *A. tenuicauda* has shorter stipules, smaller

pistillate spikes, and 2-flowered bracts scarcely more than half as large as those of *A. tacanensis*.

BERNARDIA INTERRUPTA (Schl.) Muell. Arg., *Linnaea*, 34: 171. 1865. *Acalypha interrupta* Schl., *Linnaea*, 7: 386. 1832.

Mexico, San Luis Potosí, Tamasopo Canyon, a shrub about 5 m. high, June 14–25, 1890, *C. G. Pringle 3084;* Tamazunchale, in second growth on hillside, a shrub 3 m. high with pale green flowers, July 11, 1937, *C. L. Lundell and Amelia A. Lundell 7150.* Guatemala, Department of Petén, Uaxactun, a tree 20 cm. in diameter with smooth gray bark and orange-red cambium, March 21, 1931, *H. H. Bartlett 12217;* Uaxactun to San Clemente, a small tree, April 30, 1931, *Bartlett 12806.* British Honduras, El Cayo District, Chalillo Crossing, in advanced forest on hillside, a tree 10 m. high, 10 cm. in diameter, with bright orange-colored cambium, July 15, 1936, *C. L. Lundell 6509;* San Antonio, a tree 15 cm. in diameter, May 6, 1931, *Bartlett 13023;* Toledo District, San Antonio road, on hilltop in forest shade, a tree 25 cm. in diameter, 15 m. high, September 17, 1932, *W. A. Schipp 1041.*

My interpretation of the species is based on *Pringle 3084* cited by Pax (*Engl. Pflanzenreich*, IV. 147, Pt. VII: 27. 1914). The Guatemalan and British Honduran plants have staminate flowers slightly smaller and usually twice as numerous in a bract, but these differences possibly are not of specific importance. *Lundell and Lundell 7150*, *Bartlett 12217*, *Lundell 6509*, and *Schipp 1041* were distributed as species of *Acalypha!*

Bernardia mollis Lundell, sp. nov.—Arbor, 12–15 m. alta, 25 cm. diam.; ramulis juvenilibus brevissime fulvescenti-tomentosis. Folia longe petiolata, petiolo minute tomentoso et sparse hirsuto, usque ad 4 cm. longo, lamina chartacea, ovata vel elliptico-ovata, 4.5–12 cm. longa, 2.8–7.2 cm. lata, apice abrupte et breviter acuminata, basi late rotundata, irregulariter glanduloso-crenulato-serrulata, supra sparse subadpresse hirtella, obscure rugosa, subtus molliter stellato-pilosa, glandulosa, basi trinervi, costa cum venis subtus prominentibus. Stipulae ca. 1.5 mm. lon-

gae. Flores dioecii. Inflorescentiae ♂ axillares, racemosae, 2.5–5 cm. longae, fere a basi florigerae, rachibus minute tomentosis, crassiusculis; bracteis latissime ovatis, apiculatis, ca. 2 mm. longis, 3.8 mm. latis, 3–5-floris; pedicellis usque ad 3 mm. longis, sparse pilosis. Sepala 3, ovata vel elliptica, ca. 3.5 mm. longa, utrinque adpresse pubescentia. Stamina 22–24, ca. 3 mm. longa. Disci glandulae parvae.

Mexico, Chiapas, north side of Volcán de Tacana, altitude 2100 m., April 2, 1939, *Eizi Matuda 2966* (type in the University of Michigan Herbarium).

Although no pistillate flowers or fruits are available to determine the style characteristics, the species appears referable to the section Tyria. From *B. mexicana* (Hook. & Arn.) Muell. Arg., evidently its closest relative, *B. mollis* may be distinguished by its petioles, which reach a length of 4 cm. compared with petioles 5 to 9 mm. long in the other species, by the presence of as many as 6 glands on each side of leaf blade on under surface, by the racemose rather than spicate inflorescences with only 3 to 5 flowers in a bract, and by sepals nearly twice as long and appressed hairy on both sides.

BERNARDIA MOLLIS Lundell var. **lanceifolia** Lundell, var. nov. —Frutex, 2 m. altus, 3–4 cm. diam. Folia lanceolata vel anguste lanceolato-oblonga, apice acuminata, basi obtusa, subtus sparse stellato-puberula.

Mexico, Chiapas, Volcán de Tacana, north side in second growth, altitude 2100 m., April 2, 1939, *Eizi Matuda 2978* (type in the University of Michigan Herbarium).

Bernardia oblanceolata Lundell, sp. nov.—Arbor, 4–5 m. alta, 20 cm. diam., ramulis juvenilibus minute fulvescenti-tomentosis, mox sparse stellato-puberulis vel glabrescentibus, unisexualibus. Folia petiolata, petiolo usque ad 2 cm. longo, sparse adpresse puberulo, lamina chartacea, utrinque (costa et venis exceptis) glabra, oblanceolata vel obovata, 4–8.5 cm. longa, 1.5–3.4 cm. lata, apice acuminata vel obtuse subacuminata, basi obtusa, trinervi, irregulariter glanduloso-serrulata, subtus 1–4-glandulosa,

venis lateralibus 4-jugis, supra subimpressis, subtus prominentibus. Stipulae ca. 1 mm. longae. Inflorescentiae ♂ axillares, subspicatae, usque ad 4.3 cm. longae, pauciflorae, breviter pedunculatae, dense stellato-hirtellae; bracteis latissime ovatis, ca. 3 mm. latis, 1.8 mm. longis, apiculatis, 3–6-floris; pedicellis usque ad 2.5 mm. longis. Sepala ♂ 3, ovato-elliptica, 4 mm. longa, 2.2 mm. lata, acuta, utrinque sparse adpresse pubescentia. Stamina ca. 15, 3.5–4 mm. longa. Disci glandulae parvae. Inflorescentiae ♀ terminales breviter spiciformes flore solitario fertili prope basin et sursum aliis sterilibus praeditae. Sepala ♀ 5, crassa, late ovata, 2.5–3 mm. longa. Discus annularis, erosus. Ovarium fulvescenti-tomentosum. Styli laciniati. Capsula fulvescenti-tomentosa, ca. 13 mm. longa. Semina 11 mm. longa, 8 mm. diam.

Mexico, Chiapas, Siltepec, January, 1938, *Eizi Matuda 1891* (type in the University of Michigan Herbarium).

B. oblanceolata belongs to the section Tyria. The plant may be readily recognized by its oblanceolate leaves, glabrous except for a few appressed branched hairs along the costa and veins, by the few-flowered staminate inflorescences with comparatively large sepals, by the solitary sessile fertile flowers borne laterally near the base of short terminal spikes, and by the exceptionally large seed. Its affinity is with *B. mexicana* (Hook. & Arn.) Muell. Arg.

Bernardia yucatanensis Lundell, sp. nov.—Frutex vel arbor parva, usque ad 5 m. alta, ramulis unisexualibus, fulvescenti-tomentosis. Folia decidua, petiolata, petiolo usque ad 3.3 cm. longo, lamina chartacea, pallida, ovata vel ovato-lanceolata, 3.5–15 cm. longa, 2–5.8 cm. lata, apice attenuata et acutiuscula vel acuta, basi obtusa vel rotundata, irregulariter crenulato-dentata, supra et subtus juventate pilis stellatis molliter tomentosa, mox scabridula, subtus pauciglandulosa, basi trinervi, costa et venis subtus prominentibus, laxe reticulatis. Stipulae ca. 2 mm. longae. Inflorescentiae ♂ subspicatae, axillares, usque ad 2 cm. longae, e basi florigerae, dense tomentosae, bracteis 3, 1 exteriore late ovata ca. 2.5 mm. longa, 2 interioribus lanceolatis, parvis, extus tomentosis, 1–3-floris; pedicellis ca. 1.5 mm. longis. Sepala ♂ 3, raro 4, obovato-elliptica vel oblanceolata, ca. 3.2 mm. longa, acuta, extus

tomentosa, intus glabra. Stamina 23–25, usque ad 4 mm. longa. Disci glandulae minutae.

Guatemala, Department of Petén, La Libertad, in marginal forest bordering savanna, May 23, 1933, *C. L. Lundell 3355* (type in the University of Michigan Herbarium), May 14, 1933, *Lundell 3250;* Uaxactun, on ruins, March 22, 1931, *H. H. Bartlett 12293.* Mexico, Campeche, Tuxpeña, March 23, 1932, *Lundell 1433;* Santa Rita, March 13, 1932, *Lundell 1401.*

B. yucatanensis apparently belongs to the section Tyria for its relationship is with *B. dichotoma* (Willd.) Muell. Arg. of the West Indies. The longer petioles, leaf blades scabrous in age, staminate flowers usually only 1, sometimes 2 or 3, in a bract, and flowers a third larger, distinguish it from *B. dichotoma.* Pistillate flowers and fruits are unknown.

Schaefferia elliptica Lundell, sp. nov.—Frutex vel arbor parva, 3–4 m. alta, 15 cm. diam., omnino glabra, ramulis striatis. Stipulae minutae. Folia petiolata, petiolo 2–5 mm. longo, lamina membranacea, elliptica, 3.5–7.5 cm. longa, 2–4 cm. lata, apice acuta vel obtusa, basi acuta vel abrupte cuneata, pallide viridi, integra, nervis medio et lateralibus prominulis. Flores fasciculati, pedicellati, pedicellis fructiferis 3–6.5 mm. longis. Sepala 4, persistentia, late ovata, ca. 0.5 mm. longa, minute erosa. Fructus rugulosus, ovoideus vel ellipsoideus, 4–7 mm. longus, apiculatus, carne perparca rubro-aurantiaca, 2-spermus, medio utrinque longitudinaliter sulcatus.

Colombia, La Mojana, about 10 km. from Barranquilla, *Bro. Elias 1429* (type in the University of Michigan Herbarium; duplicate in Field Museum Herbarium); near Barranquilla, in second growth on clay soil in hilly limestone section, a shrub 4 m. tall, the crown rounded, leaves glossy green, fruits red-orange, August 20, 1933, *A. Dugand G. 466* (F); Puerto Colombia, altitude 50–100 m., a shrub 3 to 4 m. tall, sometimes a small slender tree 15 cm. in diameter, with smooth gray bark, July 8, 1934, *Dugand 622* (F).

The vernacular name is reported as *limoncillo* (*Bro. Elias 1429*).

S. elliptica, although known from imperfect material only, evi-

dently belongs to the *S. frutescens* Jacq. alliance. The thin membranous broadly elliptic leaves characterize the species.

Schaefferia Shrevei Lundell, sp. nov.—Frutex, ramulis striatis, juventate puberulis mox glabratis. Stipulae minutae. Folia parva, fasciculata, utrinque persistenter puberula, punctata, breviter petiolata, petiolo usque ad 2.5 mm. longo, puberulo, lamina chartacea, pallida, concolora, oblanceolata vel obovata, usque ad 2 cm. longa, 0.9 mm. lata, apice obtusa vel rotundata, basi anguste cuneata, decurrenti, integra, nervis medio et lateralibus obscuris vel supra prominulis. Flores solitarii, pedicellis fructiferis puberulis, 4–6 mm. longis, sepalis 4, persistentibus, ovatis, ca. 0.5 mm. longis, minute erosis. Fructus sparse et breviter pilosus, ovoideus vel suborbicularis, 5–7 mm. longus, apiculatus, carne perparca rubra vel aurantiaca, 1- vel 2-spermus, endocarpio crustaceo, quod si 2-spermus utrinque longitudinaliter sulcatus.

Mexico, Sonora, 3 miles northwest of Horcasitas, September 17, 1934, *Forrest Shreve 6693* (type in the University of Michigan Herbarium; duplicates in Field Museum Herbarium and the private collection of Dr. Forrest Shreve).

S. Shrevei is a well-marked species having affinities with *S. cuneifolia* Gray and *S. pilosa* Standl. *S. cuneifolia* is a glabrous plant with sessile or subsessile fruits. The Oaxacan *S. pilosa* differs in having broadly obovate larger leaves, shorter pedicels, and longer denser pubescence. In aspect the 2 species differ conspicuously.

It is a pleasure to dedicate this species to Dr. Shreve as a very slight recognition of his painstaking research on the vegetation of the arid southwestern United States and northern Mexico.

Hippocratea tabascensis Lundell, sp. nov.—Frutex scandens, ramulis glabris, viridiusculis. Folia glabra, petiolata, petiolo sulcato, usque ad 11 mm. longo, lamina membranacea, elliptica vel ovato-oblonga, 7.5–14.5 cm. longa, 4–6.8 cm. lata, apice abrupte subacuminata, cacumine obtuso, basi rotundata et abrupte acuta, margine obscure crenulato-serrulata, venis lateralibus 6–8, utrinque prominulis, venulis reticulatis. Infructescentiae omnino glabrae, parvae, 1.5–2.5 cm. longae (pedunculo 0.9–1.5 cm. longo

incluso). Carpidia 3, complanata, obovata, 4–5.5 cm. longa, 2.2–3 cm. lata, apice rotundata vel apiculata, crasse coriacea, nervosa.

Mexico, Tabasco, Estapilla near Tenosique, June 18, 1939, *Eizi Matuda 3484* (type in the University of Michigan Herbarium).

Clusia Massoniana Lundell, sp. nov.—Arbor usque ad 17 m. alta, 25 cm. diam., ramulis crassis, angulatis, atro-rubris, furfuraceis. Folia glabra, petiolata, petiolo late alato, usque ad 1.8 cm. longo, apice 1 cm. crasso, basi angustato, lamina rigide coriacea, obovata vel oblanceolata, 10–19 cm. longa, 4–10.4 cm. lata, apice late rotundata, basi cuneata, decurrenti, utrinque prominenter costata, venis lateralibus 18–31-jugis, utrinque prominulis. Inflorescentiae cymosae, pedunculatae, nodulis bibracteatis. Flores ♂ sessiles, numerosi, sepalis 4, decussatis, late suborbicularibus, usque ad 7 mm. longis, 2 exterioribus minoribus, petalis 5, oblongis vel obovato-oblongis, usque ad 1.4 cm. longis, staminibus ca. 55, usque ad 8 mm. longis, antheris 2–2.8 mm. longis quam filamentis multo brevioribus. Flores ♀ ignoti. Capsula 3 vel 5, ellipsoidea, usque ad 3 cm. longa, 1.8 cm. diam., pedicellata, 5-locularis, stylis 3–4.5 mm. longis, crassis.

British Honduras, El Cayo District, Mountain Pine Ridge, bordering Río Frio at San Agustin, July 26, 1936, *C. L. Lundell 6605* (type in the University of Michigan Herbarium); same locality, *Lundell 6598;* Vaquero, bordering creek, *Lundell 6887;* Mountain Pine Ridge, *Bartlett 11933, 13081.*

C. Massoniana has been confused with *C. Salvinii* Donn. Sm. of the highlands of Guatemala, which it closely resembles. It may be separated from *C. Salvinii* by its petiole, which is broadest at base of leaf blade, by anthers which are much shorter than the filaments, and by considerably larger ellipsoid fruits. In *C. Salvinii* the petioles are slightly constricted at base of leaf blade, the anthers are three times as long as the filaments, and the capsules are globose and smaller than those in *C. Massoniana.* In reaching the conclusion that the British Honduran tree represents a distinct species, a comparison has been made with the type of *C. Salvinii,* through the courtesy of Dr. W. R. Maxon.

The tree abounds along brooks and creeks in the Mountain Pine Ridge of British Honduras. It is with pleasure that I name it in honor of my good friend Mr. Robert K. Masson of Belize. For more than a decade I have enjoyed his gracious hospitality on each visit to the Colony. Furthermore, he has aided our studies immeasurably through official courtesies extended at every opportunity.

Clusia Schippii Lundell, sp. nov.—Frutex epiphyticus, ca. 8 m. altus, 7.5 cm. diam., glaber, ramulis crassis. Folia glabra, breviter petiolata, petiolo alato, 1–2 cm. longo, lamina tenuiter coriacea, obovata vel obovato-elliptica, 13–20 cm. longa, 5.8–9.5 cm. lata, apice late rotundata, basi late cuneato-angustata, decurrenti; costa crassiuscula, subtus elevata; venis lateralibus numerosis, utrinque prominulis. Infructescentiae subcapitatae, pedunculatae, pedunculis 1 cm. longis, crassis. Sepala 4, decussata, suborbicularia, usque ad 6 mm. longa, 2 exteriora paullum minora. Capsulae 5, sessiles, basi bibracteatae, globosae (immaturae), 6-loculares, stylis 3–3.5 mm. longis.

British Honduras, Toledo District, Camp 32, British Honduras–Guatemala boundary survey, altitude about 800 m., May 10, 1934, *W. A. Schipp 1275* (type in the University of Michigan Herbarium).

C. Schippii is noteworthy for its subcapitate infructescence of 5 sessile capsules. The material is incomplete, but the species appears to have affinities with *C. Salvinii* Donn. Sm., *C. Massoniana* Lundell, and possibly with *C. palmana* Standl.

Fuchsia aprica Lundell, sp. nov.—Fruticosa, dense ramosa, ramulis gracilibus, minutissime tomentellis vel subadpresse puberulis, cortice rimosis. Folia opposita, breviter petiolata, petiolo glabro, usque ad 2.2 mm. longo, lamina juventate sparse ciliolata mox glabrata, chartacea, lanceolata, oblanceolato-oblonga, vel obovato-elliptica, 4–17 mm. longa, 2.2–5 mm. lata, apice acuta, basi acuminata vel acuta, margine remote et obscure paucidenticulata vel subintegra, subtus paulo pallidiore. Flores axillares, solitarii, 1.5–1.9 cm. longi, 3- vel 4-meri; pedicellis adpresse puberulis, usque ad 3.5 mm. longis, gracillimis; hypanthio sub-

cylindrico, glabro, 7–10 mm. longo, supra ovarium constricto; sepalis lanceolatis vel ovato-lanceolatis, acuminatis, 6–9 mm. longis, hypanthio paulo brevioribus; petalis ellipticis, 4.5–7 mm. longis, integris vel subintegris, emarginatis, obtusis vel rotundatis, quam sepalis brevioribus; staminibus 6 vel 8, biseriatis; filamentis usque ad 1.2 mm. longis, antheris ca. 2.2 mm. longis; ovario subgloboso, minute adpresse puberulo; stigmate 4-lobato.

Mexico, Chiapas, Volcán de Tacana, in open rocky places, altitude 2000–4038 m., August, 1938, *Eizi Matuda 2378* (type in the University of Michigan Herbarium).

According to description, the plant is very close to *F. mixta* Hemsl. The appressed puberulent ovary, larger petals, and flowers often trimerous are its distinguishing characteristics.

Fuchsia heterotricha Lundell, sp. nov.—Fruticosa, ramulis gracillimis, breviter subadpresse pilosis. Folia opposita, longe petiolata, petiolo canaliculato, piloso, 4–23 mm. longo, lamina membranacea, ovata vel elliptica, 0.8–3.5 cm. longa, 0.6–1.4 cm. lata, apice acuta, basi cuneata, supra sparsissime subadpresse pilosa vel glabrata, subtus paulo pallidiore sparse pilosa, margine subintegra, venis lateralibus 4–5-jugis. Flores axillares, solitarii, ca. 9 mm. longi (ovario incluso); pedicellis pilosis, 5.5–15 mm. longis, gracillimis; hypanthio cylindrico, ca. 5.5 mm. longo, sparse piloso; sepalis anguste triangularibus, acuminatis, ca. 2.2 mm. longis, sparse pilosis, quam hypanthio brevioribus; petalis parvis, late ovatis vel ellipticis, ca. 0.8 mm. longis, integris, apice rotundatis, hypanthio multo brevioribus; staminibus fere sessilibus, inclusis; ovario globoso, sparse piloso; stylo breviter exserto; stigmate profunde 4-lobato. Fructus globosus, usque ad 6.5 mm. diam.

Mexico, Chiapas, Volcán de Tacana, altitude 1000–2000 m., August, 1938, *Eizi Matuda 2457* (type in the University of Michigan Herbarium).

The affinity of *F. heterotricha* is with *F. chiapensis* Brandeg.; it differs in leaf form, length of petioles, and type of pubescence. The pubescence consists of a lower layer of rather fine incurved hairs above which there are scattered long spreading hairs.

Fuchsia striolata Lundell, sp. nov.—Fruticosa, ramulis juventate subadpresse puberulis, mox glabratis. Folia opposita, longe petiolata, petiolo canaliculato, supra dense subadpresse puberulo, 0.8–2.6 cm. longo, lamina chartacea, ovata, raro lanceolata vel elliptica, 2.5–9 cm. longa, 1.7–5 cm. lata, apice acuminata, basi acutiuscula, utrinque dense et minute striolata, subtus pallidiore glabra, margine obscure et remote denticulata, ciliolata, costa et venis supra subadpresse puberulis, venis lateralibus 4–8-jugis, prominulis. Flores axillares, solitarii, pedicellis fructiferis sparse subadpresse puberulis, 6–12 mm. longis. Fructus globosus, ca. 7 mm. diam., sparse adpresse puberulus.

Mexico, Chiapas, Volcán de Tacana, 1400 m., March 17–23, 1939, *Eizi Matuda 2765* (type in the University of Michigan Herbarium).

F. striolata is noteworthy for its comparatively large, finely striolate leaves and short pedicels.

Fuchsia tacanensis Lundell, sp. nov.—Fruticosa, ramulis gracillimis juventate sparse pilosis mox glabratis. Folia opposita, longe petiolata, petiolo piloso, usque ad 1.7 cm. longo, lamina membranacea, ovata, 2.5–7.5 cm. longa, 1.4–4.2 cm. lata, apice breviter acuminata, basi acuta, utrinque sparse pilosa, subtus pallidiore, margine remote denticulata, venis lateralibus 6–8-jugis, subtus prominulis. Flores omnino glabri, axillares, solitarii, ca. 1.5 cm. longi; pedicellis omnino glabris, usque ad 2 cm. longis; hypanthio lato, ca. 5.5 mm. longo, supra ovarium constricto; sepalis acuminatis, ca. 6.5 mm. longis, hypanthio dimidio longioribus; petalis ovatis, ca. 3.5 mm. longis, apice late bidentatis, hypanthio multo brevioribus; staminibus inclusis, subsessilibus; ovario ellipsoideo, glabro; stylo filiformi glabro; stigmate 3- vel 4-lobato.

Mexico, Chiapas, Volcán de Tacana, altitude 1000–2000 m., August, 1938, *Eizi Matuda 2399* (type in the University of Michigan Herbarium).

The species belongs to the *F. microphylla* H.B.K. complex and has affinities with *F. Seleriana* Loes. and *F. mixta* Hemsl. Compared with *F. tacanensis*, *F. mixta* has pedicels only a third as

long, and much smaller glabrous leaves. In *F. Seleriana* the pedicels and calyx are pubescent, and the flowers are smaller, with calyx lobes considerably shorter than is the tube. The sparsely pilose leaves, long slender glabrous pedicels, glabrous flowers, calyx lobes slightly longer than tube, and the bidentate petals distinguish *F. tacanensis*.

Ardisia ovandensis Lundell, sp. nov.—Arbor, 9 m. alta, 25 cm. diam., ramulis crassiusculis, glabris. Folia glabra, petiolo usque ad 1.7 cm. longo, lamina decurrenti, obovata, 13.5–21 cm. longa, 5–7.6 cm. lata, apice abrupte obtusiuscula, basi attenuata, cuneata, integra, chartacea, minute punctata, nervo medio supra subimpressa subtus elevata, venis lateralibus numerosis, utrinque prominulis. Inflorescentiae terminales, subsessiles, corymbosae, foliis breviores, glabrae, pedicellis usque ad 8.5 mm. longis, apice incrassatis. Flores glabri, ante anthesin ca. 10 mm. longi, hypanthio incluso; sepalis 5, late ovatis, rotundatis, ca. 1.5 mm. longis, punctatis, haud ciliatis; petalis 5, basi connatis, tubo ca. 2 mm. longo, lobis anguste oblongis vel oblanceolato-oblongis, ca. 8 mm. longis, apice late obtusis vel rotundatis, revolutis, dense punctatis, staminibus ca. 8 mm. longis, petalis subaequalibus; filamentis ca. 3 mm. longis, glabris; antheris anguste oblongis, ca. 5 mm. longis, apice dehiscentibus, concoloribus nec punctatis; ovario glabro, ovoideo, stylo gracillimo antheras superante.

Mexico, Chiapas, Mt. Ovando, altitude 1250–2370 m., July, 1938, *Eizi Matuda 2549* (type in the University of Michigan Herbarium).

A. ovandensis is referable to the subgenus Icacorea and may have some affinity with *A. compressa* H.B.K. The obovate cuneate leaves, the slender, comparatively long flower buds, the presence of a short but well-developed hypanthium, the slender petals, and the linear-oblong anthers subequaling the petals are distinguishing characteristics.

Ardisia tacanensis Lundell, sp. nov.—Ramuli crassiusculi, glabri. Folia glabra, petiolo alato, 5–8 mm. longo, lamina anguste oblanceolata, 6–12 cm. longa, 1.5–2.4 cm. lata, apice acuminata,

basi attenuata, decurrenti, obscure et remote crenulato-denticulata, subchartacea, nervo medio supra impresso, subtus elevato, venis lateralibus inconspicuis; punctulis nigris, prominulis. Inflorescentiae terminales, multiflorae, usque ad 5 cm. longae, corymbosae, foliis multo breviores, sessiles, glabrae, bracteis ligularibus, usque ad 8 mm. longis, persistentibus; pedicellis usque ad 8 mm. longis. Flores 4–5 mm. longi, sepalis 5, glabris, non ciliatis, minutissime erosis, ovatis vel late elliptico-ovatis, 1.1–1.7 mm. longis, punctatis; petalis 5, ca. 3.8 mm. longis, haud vel sparse punctatis, haud reflexis, basi connatis, lobis late ovatis, ca. 2.3 mm. longis, rotundatis, extus glabris, intus ad basin glandulosis; staminibus petala aequantibus vel excedentibus, usque ad 4.5 mm. longis; filamentis glabris; antheris minutis, cordatis, ca. 0.8 mm. longis, apiculatis; ovario glabro, ovoideo; styli tenui, antheras subaequante.

Mexico, Chiapas, west side of Volcán de Tacana, altitude 2800 m., March 30, 1939, *Eizi Matuda S-226* (type in the University of Michigan Herbarium).

A. tacanensis evidently is referable to the subgenus Icacorea and has affinity with *A. Tuerckheimii* Donn. Sm. of Guatemala. *A. tacanensis* is unusually well marked by its narrow oblanceolate leaves, compact short corymbose glabrous inflorescences, comparatively small glabrous flowers, long filaments, and minute apiculate anthers.

Bumelia tabascensis Lundell, sp. nov.—Arbor 18 m. alta, 35 cm. diam., ramulis crassiusculis, inermibus, glabratis. Folia alterna, longe petiolata, petiolo usque ad 2.2 cm. longo, glabrato, lamina rigide coriacea, elliptica vel obovato-elliptica, 7.5–14 cm. longa, 3–5.4 cm. lata, apice obtusa, basi cuneata, juventate utrinque sericea mox glabrata, nervo medio supra subimpresso subtus prominenti, venis lateralibus ca. 13 subtus prominulis. Flores in axillis fasciculati, pedicellis glabris, 6–8 mm. longis; sepalis 5, inaequalibus, coriaceis, glabris, late ovatis vel suborbicularibus, 1.5–2.5 mm. longis, apice rotundatis. Corolla glabra, ca. 4.6 mm. longa, tubo ca. 1.8 mm. longo incluso, lobis 3–5 ovato-rotundatis basi cordatis; appendicibus quam lobis paulo brevioribus oblique

lanceolatis acuminatis subintegris; antheris ca. 1.5 mm. longis, acuminatis; staminodiis lanceolatis, ca. 3 mm. longis, margine erosis; ovario glabro, 5-loculari.

Mexico, Tabasco, Retiro near Tenosique, in virgin forest, June 19–25, 1939, *Eizi Matuda 3455* (type in the University of Michigan Herbarium).

Diospyros campechiana Lundell, sp. nov.—Arbor 7–10 m. alta, 40–45 cm. diam., ramulis minutissime puberulis et sparse nigri-strigillosis, gracilibus. Folia magna, petiolata, petiolo crassiusculo, 10–13 mm. longo, minutissime puberulo et sparse nigri-strigilloso, lamina pallida, chartacea, oblonga, 10–21 cm. longa, 3.8–7.3 cm. lata, apice obtuse subacuminata, basi late subcuneata, margine revoluta, supra glabra costa ad basin minutissime puberula excepta, subtus glandulosa juventate sparsissime nigri-strigillosa mox glabrata costa minutissime puberula, nervis lateralibus 7–9-jugis subtus prominulis. Cymae axillares, sessiles vel subsessiles, 3–4-florae, dense et minute nigri-strigillosae; pedicellis fructiferis crassis, usque ad 2 mm. longis; calyce persistenti usque ad 12 mm. lato, sparse et minute nigri-strigilloso, lobis 4, raro 5, rotundatis, usque ad 4 mm. longis, reflexis. Fructus (immaturus) ellipsoideus, glaber, ca. 1.3 cm. longus, 1 cm. diam.

Mexico, Campeche, Palizada, in swamp forest, July 25–28, 1939, *Eizi Matuda 3843* (type in the University of Michigan Herbarium).

D. campechiana evidently bears a close relationship to *D. Ebenaster* Retz. Leaves of the 2 species are strikingly alike, and both have a field of glands on the under surface near the base. *D. campechiana* may be readily recognized by its small glabrous fruits and persistent calyx only 12 mm. wide; the peculiar short black appressed hairs sparsely to densely covering all parts, excepting the upper leaf surface and the fruits, distinguish it further.

Marsdenia mayana Lundell, sp. nov.—Suffruticosa, volubilis, 10-metralis, ramulis glabris, striatis. Folia glabra, petiolo canaliculato, 1.2–2.2 cm. longo, lamina membranacea vel subchartacea, oblonga vel lanceolato-oblonga, 12–14.7 cm. longa, 3–4.7 cm. lata,

apice acuminata, basi acuta in petiolum attenuata, costa supra impressa, subtus elevata, venis lateralibus utrinsecus 6–8. Inflorescentiae sessiles, singulae in nodo, subdensiflorae, pedicellis ca. 3 mm. longis, novellis adpresse strigilloso-tomentosis, demum glabrescentibus, basi bracteolatis. Calyx prope sinum uniglandularis, segmentis late ovatis, 2.5–3 mm. longis, rotundatis, ciliatis. Corolla 5 mm. longa, viridula, extus glabra, intus minute tomentella, tubo campanulato, ca. 3 mm. longo, lobis late ovatis, ca. 2 mm. longis, rotundatis; coronae squamis membranaceis, oblongis, ca. 3 mm. longis, apice liberis; polliniis erectis, oblongo-ellipsoideis; carpellis glabris.

British Honduras, El Cayo District, Valentin, in advanced forest in limestone valley, June 23, 1936, *C. L. Lundell 6192* (type in the University of Michigan Herbarium).

M. mayana is a peculiar species of doubtful relationship. The narrow oblong glabrous leaves with petioles up to 2.2 cm. long, sessile inflorescences, small flowers, and corolla minutely tomentellous within are noteworthy characteristics.

Athenaea affinis Morton,[1] sp. nov.—Frutex 2–6 m. altus, caulibus teretibus, ubique puberulis, pilis simplicibus. Folia geminata, paulo inaequalia, majora longe petiolata (petiolo usque ad 6 cm. longo, puberulo), lamina late ovata, usque ad 14 cm. longa et 8.5 cm. lata, caudato-acuminata, basi cordata, vix obliqua, membranacea, integra, supra sparse pilosula, subtus in venis puberula. Folia altera similia sed minora et brevius petiolata. Flores in axillis aggregati, numerosi, pedicellis floriferis ca. 2 cm. longis, filiformibus, puberulis, apice incrassatis. Calyx campanulatus, pilosulus, ca. 3 mm. longus, evidenter 5-denticulatus. Corolla flava, stellata, tubo ca. 4 mm. longo, lobis ca. 4 mm. longis, externe puberulis. Calyx fructiferus auctus, membranaceus, baccam includens, apice apertus, non angulatus. Bacca rubra, parva, ca. 4 mm. diam., globosa, non nitens.

British Honduras, El Cayo District, Cohune Ridge, in secondary forest, July 10, 1936, *C. L. Lundell 6452* (type in the U. S.

[1] The new species of Solanaceae described by Mr. C. V. Morton are published by permission of the Secretary of the Smithsonian Institution.

National Herbarium, Nos. 1,688, 341–42; duplicate in the University of Michigan Herbarium).

The similarity of this species in the flowering stage to *Capsicum Lundellii* is indeed striking. The fruiting calyx is, however, quite different, in the present species being membranous, enlarged, and enclosing the small berry except at the top. In *Capsicum Lundellii* the fruiting calyx is unaltered and remains at the base of the berry. The 2 species may be distinguished vegetatively as follows:

Stems puberulous in lines; leaves strongly oblique at base.....
.....*Capsicum Lundellii*
Stems puberulous all over; leaves nearly equal at base.....
.....*Athenaea affinis*

Capsicum Lundellii Morton, sp. nov. Subg. Brachistus.—Frutex 3 m. altus, caulibus subangulatis, subflexuosis, bifariam sparse puberulis, pilis simplicibus. Folia geminata, inaequalia, majora longe petiolata (petiolo usque ad 8 cm. longo, puberulo), lamina late ovata vel suborbiculari, usque ad 17 cm. longa et 11.5 cm. lata, apice cuspidato-acuminata, basi obliqua, cordata, tenuiter membranacea, integra, utrinque pallide viridi, supra minutissime pilosula, subtus in venis puberula, pilis simplicibus. Folia minora similia sed brevius petiolatà, usque ad 10.5 cm. longa. Flores in axillis aggregati, numerosi, pedicellis filiformibus, usque ad 1.5 cm. longis, fere glabris. Calyx campanulatus, ca. 2 mm. longus, parce strigillosus, fere truncatus, minute 5-denticulatus. Corolla verisimiliter flava, stellata, ca. 12 mm. lata, tubo 4 mm. longo, lobis late triangularibus ca. 5 mm. longis, externe puberulis, fauce intus immaculata. Filamenta lata, intus pilosa. Antherae liberae, longitudinaliter dehiscentes. Calyx fructiferus immutatus. Bacca parva, glabra, globosa, ca. 5 mm. diam., non nitens.

British Honduras, El Cayo District, Cohune Ridge, in secondary forest, July 10, 1936, *C. L. Lundell 6453* (type in the U. S. National Herbarium, Nos. 1,688, 343–44; duplicate in the University of Michigan Herbarium).

Solanum cuspidatum Morton, sp. nov. Subg. Lycianthes.—Caules scandentes, 1–3 m. longi, vix lignescentes, gracilis, saepe flexuosi, inferne vix 3 mm. diam., molliter villosuli, pilis hyalinis,

multiseptatis, simplicibus. Folia geminata, inaequalia; majora petiolata (petiolo perspicue villoso, vix 6 mm. longo), lamina ovato-lanceolata, usque ad 10 cm. longa et 4 cm. lata, tenuiter membranacea, cuspidato-acuminata, basi obtusa, integra, supra pilosa, subtus molliter villosa, pilis omnibus simplicibus, eglanduliferis, septatis, venis primariis ca. 4-jugis. Folia minora brevissime petiolata, late ovata vel suborbicularia, usque ad 2.2 cm. longa et 1.8 cm. lata, obtusa. Flores solitarii, axillares, longe pedicellati, pedicello 2.5–3.5 cm. longo, gracillimo, piloso; calycis tubus cupuliformis, truncatus, ca. 2 mm. longus, apice 4.5 mm. latus, intus glaber, externe dense villosus, sub margine dentes 10, filiformes, longe pilosos, alternatim inaequales, longiores 13 mm. longos, breviores ca. 11 mm. longos, omnes ca. 0.5 mm. latos gerens. Corolla alba, rotata, plicata, ca. 2.5 cm. lata, tubo 9–10 mm. longo, lobis late triangularibus, ca. 4 mm. longis, externe in plicis parce pilosis. Stamina aequalia, filamentis liberis, glabris, ca. 1.5 mm. longis, antheris connatis, 4–4.5 mm. longis, connectivo glabro. Ovarium conicum, glabrum, stylo glabro, ca. 5.5 mm. longo. Bacca rubra, globosa, ca. 1 cm. diam., glabra; granula sclerotica desunt. Semina lutea, ca. 3 mm. lata.

British Honduras, El Cayo District, on Arenal-Valentin road through high forest, June 20–21, 1936, *C. L. Lundell 6172* (type in the U. S. National Herbarium, No. 1,688,328; duplicate in the University of Michigan Herbarium); Valentin, in limestone valley, *Lundell 6248;* Chalillo Crossing, in high forest, *Lundell 6508.*

In Bitter's treatment[2] this species will fall into *Lycianthes*, subg. Polymeris, sect. Simplicipila, ser. Piliferae. It is evidently not closely related to others of this group, being more suggestive of *Solanum Purpusii* Brandeg. and *S. tricolor* Moc. & Sessé of the section Eupolymeris. However, *S. cuspidatum* may not be placed in this section, because of the equal filaments. The calyx teeth are perhaps the longest in the subgenus Lycianthes.

Solanum hondurense Morton, sp. nov. Subg. Lycianthes.—Caules suffrutescentes, 1–2 m. longi, apice parce bifariam puber-

[2] George Bitter, "Die Gattung Lycianthes," *Abh. Nat. Ver. Bremen*, 24, Pt. 2: 292–520. 1919.

uli, pilis simplicibus, incurvatis. Folia solitaria, longe petiolata, petiolo gracili, usque ad 3 cm. longo, glabro, lamina foliorum ovato-lanceolata, usque ad 16 cm. longa et 6.8 cm. lata, longe acuminata, basi cuneata, in petiolum decurrens, membranacea, integra, supra sparse pilosuli, pilis simplicibus, subtus mesophyllo glabro, venis parce puberulis, pilis simplicibus apice subuncinatis, venis primariis ca. 6-jugis. Flores axillares, solitarii, pedicello 2.5–3 cm. longo, gracili, subpendulo, apice incrassato, glabro; calycis tubus cupuliformis, ca. 2 mm. longus, truncatus, ca. 4 mm. latus, externe parcissime incurvo-puberulus, infra marginem dentes 10 subulatos, inaequales, longiores ca. 5 mm. longos, breviores ca. 3 mm. longos gerens. Corolla alba, plicata, ca. 2 cm. lata, stellata, tubo ca. 4 mm. longo, lobis lanceolatis, ca. 6 mm. longis, glabris. Filamenta aequalia, glabra, ca. 1 mm. longa, libera. Antherae connatae, ca. 6 mm. longae, connectivo glabro. Bacca deest.

British Honduras, El Cayo District, Chalillo Crossing, in high forest, July 15, 1936, *C. L. Lundell 6512* (type in the U. S. National Herbarium, No. 1,688,356; duplicate in the University of Michigan Herbarium).

This species also goes into the section Simplicipila, and is near **Solanum symphyandrum** (Bitt.) Morton, comb. nov.,[3] founded on specimens collected at Mirador, Vera Cruz, Mexico. I have not seen specimens, but, from Bitter's excellent description, that species differs in its much narrower, almost willow-like leaves, not over 2.4 cm. wide, and in its smaller calyx, with shorter teeth. The petioles are said by Bitter to be only 0.2 to 0.5 mm. long, but doubtless centimeter was intended. Even so, the petioles are evidently very much shorter than those of the present species.

Solanum hypoleucum (Standl.) Morton, comb. nov. *Lycianthes hypoleuca* Standl. *Trop. Woods*, 9: 12. 1927.

British Honduras, El Cayo District, Valentin, *Lundell 6237;* Cohune Ridge, *Lundell 6454*.

Stemodia fruticosa Lundell, sp. nov.—Fruticosa, ramulis juventate nigris, minute subadpresse pilosellis, mox glabratis, al-

[3] *Lycianthes symphyandra* Bitt., *ibid.*, p. 430.

bidis, teretibus. Folia petiolata, ternata, petiolo 2–6 mm. longo, pubescenti, lamina chartacea, ovata, 1.5–5.7 cm. longa, 1–2.7 cm. lata, apice acuta, basi cuneata, integerrima, sursum crenato-serrata, supra atroviridi, sparse subadpresse hirsutula, subtus paulo pallidiore, in costa et venis lateralibus pinnatis hirsutulis. Inflorescentiae axillares, fasciculatae vel breviter pedunculatae, bracteatae, pedicellis filiformibus, unifloris, usque ad 9 mm. longis, sparse subadpresse pilosellis. Sepala 5, glanduloso-puberula, lanceolato-linearia, superiora usque ad 6 mm. longa, infima paulo breviora, apice acutiuscula. Corolla 1.5–1.7 cm. longa, extus hirtella, intus pilosa, tubo subcampanulato, 1.1–1.2 cm. longo, lobis suborbicularibus, subaequalibus. Stamina 4, paulo supra tubi basin affixa, breviora ca. 3.5 mm. longa, longiora ca. 7 mm. longa, glabra, antheris pilosis. Staminodia minutissima. Ovarium glabrum.

British Honduras, El Cayo District, Vaca, February 24, 1938, *Percy H. Gentle 2252* (type in the University of Michigan Herbarium).

According to the collector, the plant is a shrub with white flowers. In some of the leaf axils the pedicels are fasciculate, in others they are borne on short peduncles; both conditions are found on the same twig. The relationship of *S. fruticosa* is with *S. macrantha* Robinson.

Appunia parviflora Lundell, sp. nov.—Frutex parvus, ramulis nigris, sparse strigillosis, internodiis in ramulo summo novello 4–8 cm. longis. Folia opposita, petiolata, petiolis strigillosis, 6–12 mm. longis, lamina chartacea, elliptica, raro lanceolata vel oblanceolata, 9.5–16 cm. longa, 3.5–7.5 cm. lata, apice subabrupte acuminata, basi acuta, supra glabra, subtus sparse et breviter adpresse pilosa vel glabrata sublucida, utrinque laxe reticulato-venosa, venis lateralibus utrinque 7–9, subtus prominentibus; stipulis usque ad 6 mm. longis, triangularibus, longe cuspidatis. Pedunculi axillares, solitarii vel gemini, dense strigillosi, 3–12 mm. longi. Capitula densa, 6–8-flora, bracteolis parvis, dense strigillosis. Flores albi, calyce cupulari-campanulato, sparse strigilloso, ca. 3.5 mm. longo (hypanthio incluso), truncato, minute

denticulato. Corolla 4- vel 5-mera, ca. 6.5 mm. longa, extus glabra, tubo cylindrico, ca. 4 mm. longo, prope apicem papilloso; lobis ovatis, ca. 1.5 mm. longis, intus dense papillosis; staminibus 4 vel 5, sub tubi apicem insertis, subsessilibus; antheris ca. 1 mm. longis; ovario 2-loculari, loculis uniovulatis; stylo (cum stigmatibus bilobatis) ca. 4 mm. longo. Bacca ellipsoidea, siccitate nigra, 6–8 mm. longa.

British Honduras, Stann Creek District, Silk Grass Creek Reserve, a slender shrub in pine land, September 5, 1939, *Percy H. Gentle 2986* (type in the University of Michigan Herbarium).

The only other North American species in the genus, *A. guatemalensis* Donn. Sm., has flowers more than twice as large, a 4-celled ovary, capitate stigma, and altogether different leaves. In *A. parviflora* the corolla lobes spread at anthesis, whereas in *A. guatemalensis* they remain suberect.

Psychotria Lundellii Standl., sp. nov.—Frutex vel arbor 2–13-metralis, trunco ad 25 cm. diam., ramis subgracilibus teretibus glabris, novellis in sicco fusco-ferrugineis, internodiis brevibus. Stipulae caducae ovales vix ultra 4 mm. longae apice late rotundatae fusco-ferrugineae glabrae. Folia mediocria petiolata subcoriacea, petiolo 6–25 mm. longo glabro, lamina oblanceolata vel oblongo-oblanceolata 8–14 cm. longa, 2–4.5 cm. lata longe angusteque acuminata vel attenuato-acuminata, basin versus longe sensim attenuata vel subabrupte acuminato-attenuata, glabra, supra in sicco fusca, costa prominente, nervis obscuris, subtus fere concolor, in axillis nervorum breviter sparse barbata, costa gracili prominente, nervis lateralibus utroque latere ca. 7 angulo lato adscendentibus arcuatis tenerrimis remotis prominulis, venulis obsoletis. Inflorescentia terminalis dense multiflora cymoso-paniculata 0.5–2 cm. longe pedunculata vulgo 4–6 cm. longa atque 5–8 cm. lata, basi trichotoma, ramis angulo lato patentibus crassis glabris vel interdum sparse breviter pilosulis, bracteis parvis latis ferrugineis cito deciduis, floribus breviter crasse pedicellatis in cymulas parvas densas dispositis. Hypanthium late turbinatum vix 1 mm. longum glabrum, calyce aequilongo profunde dentato-lobulato, dentibus triangularibus acutis.

Corolla alba 2.5 mm. longa extus glabra fauce dense albo-barbata, tubo crasso, lobis 5 oblongis acutis tubo aequilongis. Antherae semiexsertae.

British Honduras, El Cayo District, Valentin, in advanced forest in limestone valley, June 26, 1936, *C. L. Lundell 6260* (type in Field Museum Herbarium; duplicate in the University of Michigan Herbarium); Valentin, *Lundell 6194, 6234, 6249.*

Originally all these collections were determined as *P. fruticetorum* Standl., a species common in various parts of British Honduras. *P. fruticetorum* differs from *P. Lundellii* in its smaller and more condensed inflorescences, and conspicuously also in its much smaller leaves.

Randia Lundelliana Standl., sp. nov.—Arbor, trunco 7.5 cm. diam., ramis crassis subteretibus angulo recto divergentibus, novellis densissime pilis longis patentibus brunneis hirsutis, internodiis brevibus vel elongatis, ramulis apice spinis 4 crassis rigidis strigosis brunneis armatis. Stipulae persistentes triangulari-ovatae brunneae 7–10 mm. longae attenuato-acuminatae extus dense strigosae. Folia breviter petiolata herbacea, petiolo crasso vix ad 5 mm. longo, lamina late ovata usque oblongo-ovata 2.5–5.5 cm. longa 1.5–3 cm. lata acute acuminata vel acuta, basi obtusa vel rotundata, supra dense puberula atque breviter hirsuta, subtus dense pilis pallidis plus minusve intertextis hirsuta, nervis lateralibus utroque latere ca. 6. Flores dioeci, masculis ad apices ramulorum dense aggregatis numerosis sessilibus. Hypanthium ca. 4 mm. longum dense pilis longis albis subadpressis hirsutum, calycis lobis 6–7 mm. longis et ultra e basi lanceolato-ovata longe filiformi-attenuatis extus dense subadpresse albo-hirsutis. Corolla alba extus dense pilis adpressis longis albis sericea, tubo gracili ca. 1.5 cm. longo fauce paulo sensim dilatato, lobis 5 inaequalibus lanceolatis 1–1.5 cm. longis longe angusteque attenuatis intus glabris.

British Honduras, El Cayo District, Vaca, on hillside, April 26, 1938, *Percy H. Gentle 2524* (type in Field Museum Herbarium; duplicate in the University of Michigan Herbarium).

The relationship of this plant is clearly with *R. Purpusii*

Greenm. & Thompson of San Luis Potosí, Mexico. That differs in its small stipules, obovate or obovate-oblong leaves, long-attenuate at the base, and shorter calyx lobes.

Rondeletia Lundelliana Standl., sp. nov.—Frutex, ramis acute tetragonis primo sat dense strigillosis cito glabratis, internodiis plerumque elongatis. Stipulae anguste triangulares, basi paulo dilatatae, 7–8 mm. longae longe angusteque attenuatae persistentes dorso dense strigillosae. Folia opposita breviter petiolata coriaceo-membranacea, petiolo crassiusculo vix ad 1 cm. longo, lamina elliptica 13–16 cm. longa 6.5–7.5 cm. lata acuta vel breviter subabrupte acuminata, basi acuta vel subacuta, supra glabra sublucida in sicco griseo-viridis, subtus pallidior sparse breviter strigillosa atque ubique minute dense glandulosa, costa gracili elevata, nervis lateralibus utroque latere ca. 7 arcuatis prominentibus angulo latiusculo adscendentibus. Inflorescentia terminalis sessilis basi foliis 2 reductis alteris conformibus fulcrata, basi trichotoma, 10–13 cm. longa, usque 16 cm. lata, sat dense multiflora cymoso-corymbosa, bracteis minutis vix obviis triangularibus persistentibus, floribus numerosissimis densissime in cymulas parvas aggregatis pentameris sessilibus vel breviter crasse pedicellatis. Hypanthium paulo ultra 1 mm. longum dense albido-strigillosum, calyce ca. 0.5 mm. longo dense strigilloso, dentibus late triangularibus acutis vel obtusis. Corolla alba extus ubique dense albido-strigillosa, tubo gracillimo 10–11 mm. longo fauce paulo dilatato sed non barbato, lobis ovalibus apice rotundatis 3 mm. longis.

British Honduras, El Cayo District, Vaca, on hillside, April 21, 1938, *Percy H. Gentle 2504* (type in Field Museum Herbarium; duplicate in the University of Michigan Herbarium).

Previously only 2 species of *Rondeletia* have been known from British Honduras, *R. buddleoides* Benth., an altogether different plant, and *R. belizensis* Standl., which occurs also in adjacent Petén, Guatemala. The relationship of *R. Lundelliana* is with the latter species, but *R. belizensis* differs sharply in having glabrous foliage, a shorter corolla, and conspicuously elongate calyx lobes.

Sickingia mollis Lundell, sp. nov.—Arbor, ramulis teretibus, juventate breviter piloso-tomentosis, mox glabratis. Stipulae acuminatae, usque ad 1.7 cm. longae, ciliolatae, glabrae, basi sola puberulae. Folia opposita, petiolata, petiolo crassiusculo, 0.7–1.5 cm. longo, albido-piloso-tomentoso, lamina membranacea (immatura), ovato-oblonga, usque ad 10 cm. longa, 5.3 cm. lata, apice obtusiuscula vel obtuse subacuminata, acumine raro acutiuscula, basi cordata, supra (costa excepta) glabra, subtus molliter pilosa, costa nervisque albido-piloso-tomentosis, nervis lateralibus utroque latere 10–12 prominentibus, nervulis obscure reticulatis. Infructescentiae terminales. Capsula subglobosa, 2–3 cm. lata, seminibus numerosis, alatis, usque ad 2 cm. longis, 0.75 cm. latis.

Mexico, Tabasco, Reforma on the Río San Pedro de Mártir above Balancan, May 22–26, 1939, *Eizi Matuda 3161* (type in the University of Michigan Herbarium).

S. mollis is closely related to *S. salvadorensis* (Standl.) Standl., but may be readily separated by its tomentose shorter petioles, its leaf blades pilose beneath and white tomentose along the costa and veins. Furthermore, the leaves differ in form, being distinctly cordate rather than emarginate at base, with apex not acuminate as it is in *S. salvadorensis*.

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